Montana Board of Oil and Gas Conservation
Environmental Assessment

Operator: XTO Energy, Inc.
Well Name/Number: Nielson 31X-4
Location: NW NE 4 T29N R57E
County: Roosevelt**, MT; Field (or Wildcat)** Wildcat

Air Quality

(possible concerns)
Long drilling time: No, 30-40 days drilling time.
Unusually deep drilling (high horsepower rig): Triple derrick rig 19,486'MD/10,083' TVD, single lateral Bakken Formation horizontal well test.
Possible H2S gas production: Slight chance of H2S gas production.
In/near Class I air quality area: No Class I air quality area.
Air quality permit for flaring/venting (if productive): Yes, DEQ air quality permit required under 75-2-211.

Mitigation:
X Air quality permit (AQB review)
___ Gas plants/pipelines available for sour gas
__ Special equipment/procedures requirements
__ Other:_____

Comments: Associated gas to be flared or if a pipeline is run to a gathering facility then it can be hooked up. _____
_____

Water Quality

(possible concerns)
Salt/oil based mud: Yes to intermediate casing string hole, oil based invert drilling fluids. Horizontal lateral will be drilled with brine fluids. Surface casing will be drilled with freshwater and freshwater mud system.
High water table: No high water table anticipated.
Surface drainage leads to live water: No, closest drainages are about 1 mile from this location.
Water well contamination: None, closest water wells in the area are about 1/8 of a mile to the west, 1/8 of a mile to the southwest, ¼ of a mile to the southwest, ½ of a mile to the northwest and 5/8 of a mile to the northeast from this location. Depth of these wells range from 90' to 280'. The surface casing setting depth of 1800', significantly deeper than these water wells. Also, surface casing hole will be drilled with freshwater and freshwater drilling fluids. Steel surface casing will be set at 1800' and cemented to surface to protect groundwaters.
Porous/permeable soils: Yes, sandy silty clay soils.
Class I stream drainage: No, Class I stream drainages nearby.

Mitigation:
X Lined reserve pit
X Adequate surface casing
__ Berms/dykes, re-routed drainage
__ Closed mud system
__ Off-site disposal of solids/liquids (in approved facility)
__ Other: _____

Comments: 1800' surface casing well below freshwater zones in adjacent water wells. Also, covering Fox Hills aquifer. Adequate surface casing and BOP equipment to prevent problems in and around freshwater drainage.

Soils/Vegetation/Land Use

(possible concerns)
Steam crossings: None anticipated.
High erosion potential: No, location will require a moderate cut of up to 10.0' and small fill, up to 5.9', required.
Loss of soil productivity: None, location to be restored after drilling well, if nonproductive. If productive unused portion of wellsite will be reclaimed.
Unusually large wellsite: No, very large well site 550'X350'.
Damage to improvements: Slight, surface use is a cultivated field.
Conflict with existing land use/values: Slight

Mitigation
__ Avoid improvements (topographic tolerance)
__ Exception location requested
_X_ Stockpile topsoil
__ Stream Crossing Permit (other agency review)
_X_ Reclaim unused part of wellsite if productive
__ Special construction methods to enhance reclamation
_X_ Other Requires DEQ General Permit for Storm Water Discharge Associated with Construction Activity, under ARM 17.30.1102(28)

Comments: Will use existing county road #17 2048. About 1086' of new access road will be built into this location from County Road #17 2048. Freshwater cuttings will be buried on wellsite. Oil base invert drill cuttings will be buried in a lined pit on the wellsite. Oil based drilling fluids will be recycled. Completion fluids will be removed and hauled to commercial Class II Disposal. The lined pit will be buried with the liner intact with subsoil if well is productive. If well is not productive subsoil will be spread and topsoil will be spread on top of the subsoil over the pit and location. No concerns.

Health Hazards/Noise

(possible concerns)
Proximity to public facilities/residences: Residences about 1/8 of a mile to the southwest, ¼ of a mile to the northwest and ¾ of a mile to the northwest from this location. Town of Froid, Montana is about 8.25 miles to the west northwest and the town of McCabe, Montana is about 5.0 miles to the southwest from this location.
Possibility of H2S: Slight
Size of rig/length of drilling time: Triple drilling rig 30 to 40 days drilling time.

Mitigation:
_X_ Proper BOP equipment
__ Topographic sound barriers
__ H2S contingency and/or evacuation plan
__ Special equipment/procedures requirements
__ Other _____

Comments: Adequate surface casing cemented to surface with working 5000 psi double ram and annular BOP stack should mitigate any problems. Sufficient distance between location and buildings noise should not be a problem.

Wildlife/recreation

(possible concerns)
Proximity to sensitive wildlife areas (DFWP identified): None identified.
Proximity to recreation sites: None identified
Creation of new access to wildlife habitat: No
Conflict with game range/refuge management: No
Threatened or endangered Species: Species identified as threatened or endangered are the Pallid Sturgeon, Interior Lease Tern, Whooping Crane and Piping Plover. Candidate species is the Sprague's Pipit. MTFWP Natural Heritage Tracker website lists two (2) species of concern, the Baird's Sparrow and

the Whooping Crane.

Mitigation:

__ Avoidance (topographic tolerance/exception)

__ Other agency review (DFWP, federal agencies, DSL)

__ Screening/fencing of pits, drillsite

__ Other:_____

Comments: Private surface cultivated land. There maybe species of concern that maybe impacted by this wellsite. We ask the operator to consult with the surface owner as to what he would like done, if a species of concern is discovered at this location. The Board of Oil & Gas has no jurisdiction over private surface lands.

Historical/Cultural/Paleontological

(possible concerns)

Proximity to known sites: None identified.

Mitigation

__ avoidance (topographic tolerance, location exception)

__ other agency review (SHPO, DSL, federal agencies)

__ Other:_____

Comments: Surface location is private cultivated land. There maybe possible historical/cultural/paleontological sites that maybe impacted by this wellsite. We ask the operator to consult with the surface owner as to his desires to preserve these sites or not, if they are found during construction of the wellsite. The Board of Oil & Gas has no jurisdiction over private surface lands.

Social/Economic

(possible concerns)

__ Substantial effect on tax base

__ Create demand for new governmental services

__ Population increase or relocation

Comments: Wildcat Bakken Formation horizontal well. No concerns.

Remarks or Special Concerns for this site

Drill a 19,486'MD/10,083' TVD Bakken Formation single lateral horizontal well test.
No concerns.

Summary: Evaluation of Impacts and Cumulative effects

Short term impacts expected, no long term impacts anticipated.

I conclude that the approval of the subject Notice of Intent to Drill (does/**does not**) constitute a major action of state government significantly affecting the quality of the human environment, and (does/**does not**) require the preparation of an environmental impact statement.

Prepared by (BOGC): /s/Steven Sasaki
(title:) Chief Field Inspector
Date: November 4, 2011
Other Persons Contacted:

Montana Bureau of Mines and Geology, Groundwater Information Center GWIC website_____
(Name and Agency)
Roosevelt County water wells
_____
(subject discussed)
November 4, 2011_____
(date)

US Fish and Wildlife, Region 6 website
(Name and Agency)
ENDANGERED, THREATENED, PROPOSED AND CANDIDATE SPECIES MONTANA COUNTIES, Roosevelt County
(subject discussed)

November 4, 2011_____
(date)

Montana Natural Heritage Program Website (FWP)
(Name and Agency)
Heritage State Rank= S1, S2, S3, T29N R57E
(subject discussed)

_November 4, 2011_____
(date)

If location was inspected before permit approval:
Inspection date: _____
Inspector: _____
Others present during inspection:_____